

# Introduction to Programming - 2014

## Tentative Syllabus

- Introduction
- Pseudocode
- Operators, expressions and statements
- `if-else` condition
- `for` loop, `while` loop, `do while` loop
- Jump statements
- 1-d arrays
- Strings
- 2-d arrays
- Pointers, arrays vs pointers
- Functions
- Header files (`math.h`, `time.h`, custom headers)
- External functions
- Pointers to pointers and pointers to functions
- Bitwise operators
- `struct` and `union`
- Pre-processor directives and macros
- I/O handling
- Operator precedence vs order of evaluation
- Type casting
- Integral promotions
- Conversions (standard type and arithmetic)
- Dynamic memory allocation
- Linked lists
- Command line arguments
- Standard libraries
- Introduction to Python
- OOP concepts in Python

## Books

- **C Programming Language** (Ed 2) by *Brian W. Kernighan* and *Dennis M. Ritchie*, Prentice Hall
- **Expert C Programming: Deep C Secrets** by *Peter van der Linden*, Prentice Hall
- **C Programming FAQs** by *Steve Summit*, *Deborah Lafferty*, Addison-Wesley Professional
- **C Traps and Pitfalls** by *Andrew Koenig*, Addison-Wesley Professional
- **The C Puzzle Book** by *Alan R. Feuer*, Addison-Wesley Professional
- C99 standard ([ISO/IEC 9899:TC3](#))
- **A Beginner's Python Tutorial:**  
[http://en.wikibooks.org/wiki/A\\_Beginner%27s\\_Python\\_Tutorial](http://en.wikibooks.org/wiki/A_Beginner%27s_Python_Tutorial)